

WHAT IS CLAIMED IS:

1. An autofocus apparatus comprising:

an image pickup means for converting the light of an object received through a focus lens system to electric signals and  
5 outputting the signals as image data;

an A/D converting means for A/D-converting the image data to obtain digital image data;

an AF evaluating means for outputting an AF evaluated value obtained by integrating high-frequency components of brightness  
10 data in the digital image data;

a sampling means for sampling the AF evaluated value obtained by said AF evaluating means while moving the position of said focus lens system;

a flash means for illuminating light; and  
15 a focus driving means for determining a focus according to a result of the sampling of an AF evaluated value by said sampling means and driving said focus lens system to the focus position; wherein

light is flashed in synchronism with the sampling timing  
20 of an AF evaluated value, and a quantity of light at each flash is maintained substantially constant.

2. The autofocus apparatus according to Claim 1; wherein the range where an AF evaluated value is sampled is set to a range  
25 where the light of the flash can reach.

3. The autofocus apparatus according to Claim 1; wherein the light of the flash is used to obtain the AF evaluated value as well as for reducing red-eye effect.

5 4. The autofocus apparatus according to Claim 1; further comprising an AE evaluating means for calculating an AE evaluated value corresponding to brightness data in the digital image data; wherein a quantity of the light of flash is determined in synchronism with the sampling timing of the AF evaluated value  
10 according to the AE evaluated value acquired at the time of a flash.

5. The autofocus apparatus according to Claim 1; wherein it is determined whether or not a flash having a required light  
15 quantity can be performed for the number of sampling times of an AF evaluated value, and when it is determined that the flash can not be performed then the light quantity of the flash is reduced or the number of sampling times of an AF evaluated value is reduced.

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6. The autofocus apparatus according to Claim 1; further comprising an AE evaluating means for calculating an AE evaluated value corresponding to brightness data for the digital image data; wherein an AE evaluated value acquired when the flash is  
25 performed is compared to an AE evaluated value acquired without

flash, and when both of the values are not different, a flash is not performed when sampling an AF evaluated value.

7. An autofocus apparatus comprising:

5       an image pickup device which converts the light of an object received through a focus lens system to electric signals and outputting the signals as image data;

an A/D converter which A/D-converts the image data to obtain digital image data;

10       an AF evaluating unit which outputs an AF evaluated value obtained by integrating high-frequency components of brightness data in the digital image data;

a sampling unit which samples the AF evaluated value obtained by said AF evaluating unit while moving the position 15 of said focus lens system;

a flash which illuminates light; and

20       a focus driver which determines a focus according to a result of the sampling of an AF evaluated value by said sampling unit and driving said focus lens system to the focus position;

wherein

light is flashed in synchronism with the sampling timing of an AF evaluated value, and a quantity of light at each flash is maintained substantially constant.

8. The autofocus apparatus according to Claim 7; wherein the range where an AF evaluated value is sampled is set to a range where the light of the flash can reach.

5 9. The autofocus apparatus according to Claim 7; wherein the light of the flash is used to obtain the AF evaluated value as well as for reducing red-eye effect.

10. The autofocus apparatus according to Claim 7; further  
10 comprising an AE evaluating unit which calculates an AE evaluated value corresponding to brightness data in the digital image data; wherein a quantity of the light of flash is determined in synchronism with the sampling timing of the AF evaluated value according to the AE evaluated value acquired at the time of a  
15 flash.

11. The autofocus apparatus according to Claim 7; wherein it is determined whether or not a flash having a required light quantity can be performed for the number of sampling times of  
20 an AF evaluated value, and when it is determined that the flash can not be performed then the light quantity of the flash is reduced or the number of sampling times of an AF evaluated value is reduced.

12. The autofocus apparatus according to Claim 7; further comprising an AE evaluating unit which calculates an AE evaluated value corresponding to brightness data for the digital image data; wherein an AE evaluated value acquired when the flash is  
5 performed is compared to an AE evaluated value acquired without flash, and when both of the values are not different, a flash is not performed when sampling an AF evaluated value.